

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Michael D. CRANDALL
Terrence E. COOPRIDER

Serial No.:
Filed:

Group Art Unit:

Examiner:

For: Microsphere Adhesive Coated Article for Use with Coated Papers

Preliminary Amendment

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Please enter the following Preliminary Amendment.

In the Specification:

Please amend the Specification by inserting before the first line, this sentence:

“This is a continuation of Application No. 09/211,157, filed December 4, 1998.”

In the Claims:

Please cancel claims 1-4 and 12-15, with prejudice.

5. (Amended) An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises (a) a plurality of polymeric, solid, elastomeric microspheres that are the reaction product of reactants comprising polymerizable starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomers and at least one (meth)acrylamide comonomer with the proviso that the polar comonomer has no dissociable proton having a K_a of greater than 10⁻³, (b) a polymeric stabilizer in an amount of about 0.1 to about 3 parts by weight per 100 parts by weight of the microspheres, and (c) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres.

6. (Amended) An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises (a) a plurality of polymeric, solid, elastomeric microspheres that are the reaction product of reactants comprising polymerizable starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomers and at least one polar comonomer with the proviso that if the polar comonomer has a dissociable proton, the polar comonomer has no dissociable proton having a K_a of greater than 10⁻³, (b) a polymeric stabilizer in an amount of about 0.1 to about 3 parts by weight per 100 parts by weight of the microspheres, and (c) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres.

7. (Amended) An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises (a) a plurality of polymeric, elastomeric microspheres wherein the microspheres are the reaction product of polymerizable, starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomer and at least one (meth)acrylamide comonomer, (b) an initiator for the polymerizable monomer starting materials present in amounts ranging from 0.1 to approximately 2 parts by weight per 100 part by weight of the polymerizable monomer starting materials, (c) optionally, a polymeric stabilizer in an amount of between about 0.1 and about 3 parts by weight per 100 parts by weight of the microspheres, (d) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres, and (e) a chain transfer agent in an amount sufficient to produce 30-98% of a solvent-soluble portion in the microspheres.

9. The adhesive coated article according to claim 5 wherein the microsphere adhesive comprises (a) a plurality of polymeric, elastomeric microspheres wherein the microspheres are the reaction product of polymerizable, starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomer,

(b) an initiator for the polymerizable monomer starting materials present in amounts ranging from 0.1 to approximately 2 parts by weight per 100 part by weight of the polymerizable monomer starting materials, (c) optionally, a polymeric stabilizer in an amount of between about 0.1 and about 3 parts by weight per 100 parts by weight of the microspheres, (d) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres, and (e) a chain transfer agent in an amount sufficient to produce 30-98% of a solvent-soluble portion in the microspheres.

11. (Amended) An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises a plurality of hollow, polymeric, acrylate, inherently tacky, infusible, solvent-insoluble, solvent dispersible, pressure sensitive microspheres comprising (a) at least about 85 parts by weight of at least one alkyl acrylate ester or alkyl methacrylate ester, and (b) up to about 15 parts by weight of at least one (meth)acrylamide monomer, wherein a majority of the microspheres contain at least one interior void having a diameter at least about 10% of the diameter of the hollow microspheres.

Remarks

Please charge any fees that may be associated with this paper to Deposit Account No. 13-3723.

Respectfully Submitted,

Date: 22 June 2001

By: Carolyn V. Peters
Carolyn V. Peters
Registration No. 33,271

Office of Intellectual Property Counsel
3M Innovative Properties Company
P.O. Box 33427
St. Paul, Minnesota 55133-3427
Telephone: (651) 736-7929
Facsimile: (651) 736-3833

Version with markings to show amendments made:

5. (Amended) [The adhesive coated article according to claim 1] An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises (a) a plurality of polymeric, solid, elastomeric microspheres that are the reaction product of reactants comprising polymerizable starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomers and at least one (meth)acrylamide comonomer with the proviso that the polar comonomer has no dissociable proton having a K_a of greater than 10⁻³, (b) a polymeric stabilizer in an amount of about 0.1 to about 3 parts by weight per 100 parts by weight of the microspheres, and (c) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres.

6. (Amended) [The adhesive coated article according to claim 1] An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises (a) a plurality of polymeric, solid, elastomeric microspheres that are the reaction product of reactants comprising polymerizable starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomers and at least one polar comonomer with the proviso that if the polar comonomer has a dissociable proton, the polar comonomer has no dissociable proton having a K_a of greater than 10⁻³, (b) a polymeric stabilizer in an amount of about 0.1 to about 3 parts by weight per 100 parts by weight of the microspheres, and (c) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres.

7. (Amended) [The adhesive coated article according to claim 1] An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises (a) a plurality of polymeric, elastomeric microspheres wherein the microspheres are the reaction

product of polymerizable, starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomer and at least one (meth)acrylamide comonomer, (b) an initiator for the polymerizable monomer starting materials present in amounts ranging from 0.1 to approximately 2 parts by weight per 100 part by weight of the polymerizable monomer starting materials, (c) optionally, a polymeric stabilizer in an amount of between about 0.1 and about 3 parts by weight per 100 parts by weight of the microspheres, (d) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres, and (e) a chain transfer agent in an amount sufficient to produce 30-98% of a solvent-soluble portion in the microspheres.

9. (Amended) The adhesive coated article according to claim [4] 5 wherein the microsphere adhesive comprises (a) a plurality of polymeric, elastomeric microspheres wherein the microspheres are the reaction product of polymerizable, starting materials comprising at least one C₄-C₁₄ alkyl (meth)acrylate ester monomer, (b) an initiator for the polymerizable monomer starting materials present in amounts ranging from 0.1 to approximately 2 parts by weight per 100 part by weight of the polymerizable monomer starting materials, (c) optionally, a polymeric stabilizer in an amount of between about 0.1 and about 3 parts by weight per 100 parts by weight of the microspheres, (d) a surfactant in an amount of no greater than about 5 parts by weight per 100 parts by weight of the microspheres, and (e) a chain transfer agent in an amount sufficient to produce 30-98% of a solvent-soluble portion in the microspheres.

11. (Amended) [The adhesive coated article according to claim 1] An adhesive coated article comprising a substrate with a first and second major surface and a layer of microsphere adhesive on at least a portion of the first major surface of the substrate, wherein the microsphere adhesive comprises a plurality of hollow, polymeric, acrylate, inherently tacky, infusible, solvent-insoluble, solvent dispersible, pressure sensitive microspheres comprising (a) at least about 85 parts by weight of at least one alkyl acrylate ester or alkyl methacrylate ester, and (b) up to about 15 parts by weight of at least one (meth)acrylamide monomer, wherein a majority of the

microspheres contain at least one interior void having a diameter at least about 10% of the diameter of the hollow microspheres.

